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INVESTIGATIVE REPORT WRITING: A FIELD STUDY

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A FIELD STUDY**

by

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Director

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Preface

The report of investigation (ROI) is central to the clearance process: it documents the background investigation and is the primary material for the eligibility determination. Given its importance, the Defense Personnel Security Research and Education Center (PERSEREC) has undertaken a research effort to examine the efficiency of the ROI as a conduit of information.

Our major interest in this project is with the organization of case material and how it effects the adjudicator's processing of information. We presume that a uniform format for case reporting will promote consistency in adjudication.

A secondary objective is to prepare for the eventual processing of personnel security investigations on computer screens. Report formats used for hard copy ROIs will not translate effectively to computer screens so we expect this research to have applicability to this problem.

On a final note, we want to emphasize that our purpose is to find the best fit between the investigator and the adjudicator. ROI writing and reading are specialized skills that can benefit from the knowledge that has emerged in the fields of managerial communication and document design. This report suggests that improvement can be accomplished with minor intervention.

Roger P. Denk
Director

INVESTIGATIVE REPORT WRITING: A FIELD STUDY

Prepared by
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Summary

Problem and Background

The report of investigation (ROI) has an important influence on personnel security adjudications. It is the primary communication channel between the special agent and the adjudicator, and the clarity of the presentation influences how the document is read and how effectively the case is processed. This research in this report was undertaken to observe the organizational and stylistic practices of written documents contained in the Personnel Security Investigations (PSI).

Objective

This report assesses the written communication skills of Defense Investigative Service (DIS) special agents. It specifically focuses on agents' ability to report efficiently derogatory information obtained in subject interviews, developed reference interviews, confidential source interviews, and so on.

Approach

To assess special agents' writing effectiveness, over 120 PSI reports were examined, most of which contained derogatory information. Also, special agents were interviewed and protocolled to determine the report writing processes they used. Finally, adjudicators (the readers of the PSIs) were interviewed and observed to determine if they had difficulty processing the derogatory sections of PSIs.

Results

The results show that adjudicators had difficulty processing PSIs because of poor document design, unclear organization, and inappropriate style. Furthermore, field agents lacked a reader awareness when composing PSIs, making it difficult for them to write a readable report. These deficiencies will become more troublesome when adjudicators begin reading PSIs on CRT screens.

Recommendations

The report recommends that empirical research be conducted to determine if document design, organizational, and stylistic strategies advocated by effective communication researchers will improve adjudicators' reading speed, comprehension, perception of comprehension, and decision quality.

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Introduction

Because of a rash of security breaches in the last several years, the Department of Defense (DoD) has devoted a significant amount of energy to finding ways to improve the personnel security screening process. One factor that makes significant improvement in this process difficult is the large number of personnel security investigations (PSIs) conducted by Defense Investigative Service (DIS) and, at the same time, a zero tolerance for error. The large number of PSI requests has resulted in extremely high special agent caseloads and added pressure on central adjudication offices to quickly process yet accurately evaluate the PSIs.

Another factor that makes improvement difficult is recent budgetary constraints imposed on DIS. A stable or in some cases a decreasing special agent, adjudicator, and support staff workforce must process an increasing number of cases. Moreover, they must do this work without the computer technology necessary to manage the extraordinary amount of information generated by the PSIs. As a result, special agents and, in particular, adjudicators find themselves awash in a Dickensian world of ever-deepening paper that threatens to clog the personnel investigation security process.

Yet despite economic pressures and information processing limitations, the effectiveness of the security screening process still hinges on two fundamental information-related tasks: the special agents' skill in carefully gathering and accurately and efficiently communicating information to adjudicators and in adjudicators' ability to *quickly* read and *accurately* analyze that information.

This report assesses how field agents translate information gathered from their investigations into narrative reports that adjudicators can read quickly and interpret efficiently to make timely, accurate adjudication decisions. The investigation does not focus on the quality or relative worth of the information field agents obtain, nor does it assess the thoroughness of their investigation. Although these are very important research issues, they are outside the scope of this study.

Rationale for the Study

The need to adjudicate more cases with fewer resources, and, at the same time, to make timely and accurate security clearance decisions is what prompted this study. More specifically, the Defense Personnel Security Research and Education Center (PERSEREC) and DIS wanted to determine

1. the organizational, stylistic, and document design characteristics of special agent field reports to determine how well agents write narrative reports;
2. the training in report writing that new field agents receive at the DIS training facility;
3. the ways in which adjudicators process reports;
4. the difficulties, if any, adjudicators have in processing the reports.

This information could help determine if better designed, organized, and written PSIs would speed up the adjudication process and improve the quality of adjudication decisions. Also, the research results could indicate the kind of additional training, if any, field agents would need to improve their report-writing skills.

For several years DIS Headquarters has been concerned about the quality of field agents' writing skills, particularly those of new recruits recently graduated from college. DIS, like numerous researchers, educators, and business people, has realized that recent college graduates lack basic writing skills in mechanics, usage, sentence structure, and organization. These written communication problems can make case adjudication unnecessarily difficult.

More importantly, most agents have not had academic training in writing reports for busy readers, like adjudicators, who process information in distinctive ways. Most college-level writing instruction focuses on writing about personal experience or literature. Few students take managerial communication or technical writing courses that teach the reader analysis mindset, document design strategies, deductive organizational schemes, and the sentence and paragraph level writing skills needed to create reports that readers can process quickly and assess accurately. Furthermore, narrative report writing, the primary communication mode field agents use, is rarely taught in managerial communication and technical writing courses. In fact, it is rarely covered in managerial communication, technical writing, or even composition texts because book authors view it as an atypical way of presenting information used only by the law enforcement and medical professions.

Given the distinctive nature of narrative report writing, PERSEREC wanted to know if field agents learn the unique reader analysis, document design, and organizational and stylistic strategies from the DIS training program and during on-the-job training.

Finally, a significant amount of research has been conducted in the last 10 years on the relationship between document design and message comprehension. These research findings have provided some important guidelines on how to organize and write documents to make them more readable and comprehensible. This research suggests that if field agents composed reports that employed an easy-to-read visual design, used summaries and section previews, and were syntactically easy to process, adjudicators may well be able to

- * read these reports faster
- * comprehend information more easily
- * expend less energy merely processing report information
- * make better adjudication decisions

Characteristics of Special Agents Reports

PSI Sample Size

Approximately 120 PSIs were examined to determine the organizational, design, and stylistic characteristics of special agent reports. PERSEREC data files provided the first source of PSI reports. These files contain the PSIs of 564 Navy first-term enlisted men whose dates of service spanned 1979-1982. During a two-day period, approximately 60 reports were read. About 70% of these reports contained derogatory information. Although these reports are 8-10 years old, they are similar in style, document design, and organization to recent (1988) reports examined while observing adjudicators and undergoing a field-agent orientation program.

The second source of PSIs resulted from an informal four-day orientation program, conducted by a seasoned West Coast agent, that the researcher attended to become familiar with the kinds of information that a special agent must gather. The researcher and agent met one-on-one during this four-day period and carefully examined approximately 50 reports, most of which contained significant amounts of derogatory information.

The final source of PSIs were adjudicators at the Navy and Air Force central adjudication offices. While observing and assessing how adjudicators actually read field reports, particularly those with derogatory information, approximately 20 reports were carefully examined.

Although an analysis of the document design, organizational, and stylistic characteristics of field agent reports could be a research project onto itself, the approximately 120 reports examined from these three sources provided a good overview of the characteristics of PSIs and ample evidence to support the generalizations listed below.

Reports Containing Derogatory Information

During the report assessment process, it quickly became apparent that most information that field agents gather is routine. To communicate this routine information, DIS has developed standard paragraphs or boilerplate that agents merely modify by adding names, dates, years of employment, and so on to meet the information demands of a particular situation. Although these standard paragraphs could be rewritten and reorganized to make them easier to read, the time and energy to do so might well be wasted. Adjudicators quickly recognize these boilerplate paragraphs, skim them, and resume their search for report sections that "appear" to contain derogatory information. In short, the boilerplate serves as a code to indicate that the report section contains routine information.

However, an examination of PSIs containing derogatory information revealed factors that strained readability and hindered comprehension. In particular, the subject and developed reference interview sections of many reports had the following organizational, document design, and syntactic features:

1. Long paragraphs (often over a page long) that made it difficult to determine the controlling idea or the relationships between important ideas in the paragraph.
2. Few major headings or subheadings within sections containing derogatory information that would enable adjudicators to quickly identify issues and mitigating circumstances.
3. Virtually no use of lists, bullets, bold print, or underlining to aid adjudicators in the mapping and classifying information.
4. No internal previews at the beginning of long derogatory information sections that would provide adjudicators with a quick overview of the major points that were to come.
5. Long, convoluted sentences that strained readers' short-term memory.
6. Passive verbs that sometimes made it difficult to determine who was the agent of a particular action.
7. Lack of transitional words or phrases to clearly indicate relationships between ideas and sections of reports.
8. Unclear use of pronouns that made it difficult to determine who or what was the actual antecedent to the pronoun.
9. Abstract or heavily connotative language that may not trigger the same language associations or background schema in adjudicators as it did in the special agent.

Research conducted by cognitive psychologists, composition specialists, document design researchers, and managerial communication specialists has evaluated the effect that many of the factors listed above have on comprehension and reading efficiency. What follows is a brief research review divided into two sections:

1. Document Design and Organization
2. Sentence Structure and Word Choice

Literature Review

Document Design and Organization

In the area of document design, Hartly and Trueman (1985) have found through extensive testing that precise, descriptive headings significantly improve reader performance. These headings help readers to mentally model and hence classify information that is to come. Numerous cognitive psychologists have shown that the faster the reader can construct an accurate mental model of a document, the easier it is for readers to store information in long-term memory and hence remember important parts of the document. Also, Frase (1979, 1981) found that segmenting and indenting sentence components into meaningful divisions (such as lists) improved reading speed by 18%. These divisions better enabled readers to chunk important information into manageable units.

Kieras (1978, 1981) has shown that global level sentence outlines and paragraph level topic sentences simplify readers' mental operations, resulting in increased reading speed and better information recall. A global level sentence outline organizes a large section of the document for the reader by describing the major points that the writer is going to cover and the order in which they will be treated. Fielden and Dulek (1984) also claim that these organizational strategies decrease reading time and improve comprehension. Although these two researchers have conducted no empirical research, they cite internal IBM studies that support their claims and provide anecdotal arguments drawn from the experiences of high-level corporate executives.

Sentence Level Research

Miller's (1956, 1970) work on the limitations of short-term memory and Bever's (1972) research on how readers use both short- and long-term memory to process sentences provide important information on the cognitive processing restraints that make convoluted sentences difficult to read and understand. Because short-term memory can hold only 7 ± 2 chunks of information, readers confronted with too much modifying detail (left embedding of information in the form of a long modifying phrase or clause) may have difficulty retaining in short-term memory the primary subject-verb-object unit of the sentence. This subject-verb-object relationship may also be made unclear by a long string of qualifying phrases between the subject and the verb. Readers having to unravel these syntactic patterns will read slower, will have to reread sentences, or will distort or even not understand the meaning of the sentence.

Passive verbs also cause reading speed and comprehension problems. Because verbs in the passive voice invert the typical subject-verb-object syntactic pattern, readers

research studies support this generalization. Olson and Filby (1972), Danks and Sorce (1973), and Charrow and Charrow (1979) have empirically verified that readers process active verbs faster and more accurately than passive verbs, particularly those with implied subjects.

Word Choice Research

Rosch's research on verbal categories provides justification for claims that concrete language is easier to process than abstract language. Rosch (1973, 1975) has shown that we are able to quickly and accurately process language that represents basic classifications or prototypes. This language is relatively concrete so that it can trigger other clarifying words (both concrete and abstract reader background information) residing in long-term memory. However, when a document does not quickly trigger recognizable prototypes--connections with other clarifying language--readers must attempt to construct these relationships while they are reading. This process takes time, strains short-term memory, and is frustrating (Adams, 1980).

Interviews with Special Agents

To obtain an overview of the writing processes used by special agents to compose PSIs, 11 field agents were interviewed using a semi-structured format. Three of these interviews were detailed, each lasting several hours. These three agents were experienced, highly regarded, and were considered good report writers. The other eight agents were relatively new at their jobs. Their experience ranged from four months to a little less than 2 years, which was typical for the urban area where they worked. This area, like many other high cost urban areas, has experienced fast agent turnover.

These eight relatively inexperienced agents were interviewed in four-person groups without the group's team leader being present. Each group interview lasted 1 1/2 - 2 hours. The group setting did not intimidate the agents. All were eager to talk about how they wrote reports and the difficulties, if any, that they had.

The "24-hour rule" was followed for all interviews. This required that detailed interview notes and impressions be completed within one day of the interview. Also, as a back-up source of information, the interviews were taped. This allowed for secondary retrieval of information that initially might not have seemed important.

This segment of the research project was to provide an overview of the composing process of individual field agents; it was not intended as a detailed examination of the composing processes of a large number of field agents. Consequently, the generalizations in the next section must be viewed in light of the relatively small number of field agents interviewed. Despite this limited sample size, there is a striking consistency in special agent responses to several key questions. This consistency suggests that special agent responses in these areas would mirror the responses of a larger sample. What follows is a summary of the most relevant information gathered during these interviews.

Reader Analysis

Perhaps the most significant information obtained from these interviews was the agents' responses to the question, "When you are writing your reports, whom do you see as your reader?" Only one of the field agents indicated that he took into account the needs of adjudicators when writing reports. This agent had developed this adjudicator-based mindset because he was a former adjudicator himself. Surprisingly, 9 of the 11 field agents seemed puzzled by the question, for the notion of reader awareness suggested an area of concern they previously had not considered.

Management communication researchers, composition specialists, and rhetoricians agree that reader awareness and analysis is essential if writers are to compose effective

organization, and document design should be determined by the following reader-based factors:

1. How the reader is going to use the document--to make a decision, complete a task more effectively, to gain new information, and so on;
2. The way in which the reader is going to process the document: read the complete document carefully, read only certain sections carefully, or skim the document;
3. The time demands that other communications place on the reader and the time restrictions that the reader may face when reading the document;
4. The reader's perceptual set. A perceptual set is an integrated set of personal and professional experiences that affects the way a reader reacts toward language.

Given the extraordinary reading and time demands placed on adjudicators, it is crucial that special agents compose and revise field reports with the adjudicators' work environment in mind. However, 10 of the 11 agents interviewed said they wrote for themselves, the team leader, or the Section Area Chief (SAC).

Special agents did not write with the adjudicators' information processing needs in mind for several reasons.

First, special agents know little about adjudicators' work environment. Although they understand an adjudicator's primary job responsibility, most (10 of 11) agents interviewed, even the more experienced ones, had little idea of how adjudicators read reports, how many reports they had to read, the pressures they confronted when reading them, and the information-processing problems they encountered. From the agents' perspective, the adjudicator is more of an idea or a ill-defined construct that exists at the outer edges of the agents' mindscape; he or she is not seen as a report reader who uses agents' information in specific and unique ways.

Secondly, special agents lack the critical awareness or self consciousness about the writing process to be skilled writers. In Sommer's (1980) description of the writing process of unsophisticated or inexperienced writers, she observed that unsophisticated writers are generally concerned with the process of transforming the inner dialogue--the pre-text--in their minds onto paper. For these writers that is the writing process. These writers are unaware of the crucial next step: to revise and edit the document from the perspective of the reader. Because of this writer-based perspective, any changes they make in the

document (and those changes are usually minimal) are based on whether the document sounds good to *them*. In other words, they are trying to "hear" if the words on the page match their own inner dialogue. This description accurately depicts how 9 of the 11 agents described the way they composed PSIs.

Important reader concerns do not enter into the composing processes of these field agents because the agents are not conscious that there is a real reader who is going to use the document in some way. In other words, writing for most agents is exclusively a reflexive activity. Consequently, the success of a document is based on the *chance* that the field agent's stylistic, organizational, and document design choices meet the adjudicator's information processing needs.

The final reason agents may lack a reader orientation is due to the role of the team leader or SAC (Section Area Chief). In large offices, team leaders help train new agents to write effective reports; in essence they continue the work started in the PSI training program. Consequently, new field agents usually compose their reports with an eye toward meeting the needs of the team leader.

However, as the new agents who were interviewed stated, the team leader's major concern is information coverage and the objective description of that information. Clearly, these are important concerns; however, the way content is conveyed to adjudicators is just as important. According to the new special agents, team leader feedback about quality of writing is generally limited to comments about spelling, grammar, punctuation, and other surface errors. These errors, though potentially annoying, often have marginal impact on document readability and comprehension.

Based on the new special agent responses, it appears that team leaders have little expertise in providing agents with the specific feedback they need about report design, report-writing style, and the effective organization of information. This lack of expertise is not surprising; teams leaders and SACs have not been given training in managing field agents' written communications. Furthermore, they are not aware of the new information about document design, organization, and style that has recently surfaced.

Field Agent Language Habits and DIS Training

When field agents described factors that influenced the stylistic and organizational choices (e.g. paragraph length, sentence structure, word choice, and document design) they made when writing field reports, almost all (10 of 11) mentioned the significant impact that *prior* jobs or past educational experiences have had on the way they currently wrote. This perception was shared by the field-agent-in-training group as well.

Interestingly, the agents, particularly the new ones, believed that their current language habits, particularly those acquired during their academic training, were inappropriate for the kind of writing they were now doing. However, they could not pinpoint what was inappropriate about these habits. Several agents did comment they wished they had developed a "police report writing style" because that would make writing PSIs easier. However, they did not know what characteristics of a police writing style appropriate for the PSIs.

This inability to know why their writing was ineffective or why a "police report writing style" seemed more effective stems from their lack of knowledge of how adjudicators read and evaluate PSIs. Because of this perception of being ineffective writers, almost all of the new agents and even several of the experienced ones lacked confidence in their writing skills. In fact, the new agents seemed very apprehensive about writing.

Although the agents knew what should go in the reports, they were not certain what were the DIS standards for document effectiveness. Furthermore, several agents mentioned that they had been given conflicting stylistic information from team leaders and SACs. As one agent commented, "I don't think they themselves know how they want these damned things written."

The younger agents and the ones who were just completing the agent training program did mention that the PSI training course made them aware of the importance of being complete, objective, and using the narrative mode to communicate their findings. However, when asked to describe what particular characteristics of a document made it easy to read and understand, the agents could not mention specific readability criteria.

These interviews revealed an important point: the written communication norms agents internalized from these past work or educational experiences determined the stylistic and organizational choices they made when writing reports. Neither the PSI training program nor team leader feedback seemed to significantly alter the way they designed, organized, and wrote reports. It appears that DIS and DSI need to be more aware of the impact that agents' prior language habits have on their report writing skills and the concerted effort needed to change those habits.

Research conducted by Freed and Broadhead (1987), Bruffee (1986), and Myers (1985) has examined the impact that discourse communities, or communications, have on their members' perception of communication effectiveness. A discourse community can be defined as any socially constituted system which has evolved complex language standards that govern its members' rhetorical decisions to ensure that a document adheres to accepted norms prescribed by the community. These norms may govern a writer's format, organization, syntax, word, choice, sentence structure, and a wide range of stylistic decisions. The researchers argue that these norms in a sense become hardwired into a

writer's system; consequently, changing language habits becomes a difficult task for the organization. Obviously, the communication norms that were effective in one organization may be dysfunctional in another.

Given the pervasive impact that prior discourse communities have had on field agents' writing habits, DIS training facilities as well as team leaders and SACs have the task of changing those communication habits to meet the unique information processing needs of adjudicators. As was indicated earlier and will be discussed in greater detail in the next section, the information processing habits of adjudicators are unique compared to those of most readers. As a result, field agents must be taught written communication strategies that complement the way that adjudicators read documents.

Personnel Security Investigations Course

For new agents, the four-week DSI Personnel Security Investigations (PSI) course is the logical place to begin breaking field agents of prior language habits and providing them with the new skills they need to write readable reports. Also, this course would be the ideal time to begin developing in field agents a sense of adjudicator orientation and awareness so that agents could have the specific information processing needs of these readers in mind while writing their reports.

Although the PSI course devotes 17 hours to narrative report writing, most of that time, as reflected by the course's syllabus, is devoted to the content of reports. For example, in the 6-hour "Detailed Narrative Report Writing" section of the course, only 30-45 minutes is spent on clarity, impartiality, conciseness, and Report of Investigation (ROI) report writing guidelines. This coverage is inadequate and needs significant expansion for the following reasons:

1. The stylistic and organizational strategies that make a report clear are not intuitively obvious. Different writers will have significantly different perceptions as to which reports are clear and which are difficult to read. Furthermore, clarity is a reader-based quality. Consequently, clarity needs to be carefully defined from the perspective of how adjudicators read and assess these reports.
2. The coverage needs to make use of research conducted by document design specialists, cognitive psychologists, reading research specialists, and managerial communication researchers. For example, no attention is given as to how field agents can use sentence previews and headings to create for adjudicators mental maps that will enable them to anticipate information that will come and thus more easily classify and remember that information.

3. The PSI course section does not break down ineffective writing habits and adequately indoctrinate new agents into the writing style necessary to make PSIs readable. As mentioned earlier, new field agents' written communication habits have been formed by years of formal education or by the communication requirements of former jobs. Changing the written communication habits of new agents to meet the information processing needs of adjudicators is a formidable task, representing a major organizational intervention.

These shortcomings are not the fault of DSI trainers. Most, if not all, trainers are former agents skilled in teaching new agents interview strategies, the type of information they need to obtain, the types of forms they need to use, and so on. In all likelihood, they have not been trained by written communication specialists to teach effective report writing skills to new agents. Consequently, DSI may have little knowledge of what constitutes a readable report, of what strategies are available to make a report easier to read, of how to instruct new agents to write more effectively, and of the kind of feedback to give them about their writing skills to make them more effective. Furthermore, the instructors may not be aware that the way a document is written significantly affects how readers can process the report and the amount of information they can retain after one reading. In treating report writing, the DSI instructors focus instruction on what they know best: the appropriate content for a PSI.

Communication Coverage in the PSI Manual

The scant attention devoted to clear report writing in the *Manual For Personnel Security Investigations* also reflects this need for greater awareness about the importance of clearly written reports. The chapter devoted to report writing focuses primarily on the content of reports. Only two pages (6-10 and 6-11) discuss the characteristics of effective report writing. And only two short paragraphs are devoted to clarity and conciseness.

In addition, a number of written examples used to illustrate particular types of PSIs do not reflect quality document design and organization. For example, the "IBI Subject Interview Report Writing Examples of Qualifying Remarks" (DIS 20-1-M-Encl 21) lacks major headings to preview information in forthcoming paragraphs and lists to highlight numerical information. Also, the "Sample Unfavorable IBI" (DIS-20-M-Encl 23) needs improvement: major headings and shorter paragraphs would make the report visually more appealing and easier to read.

Need for a DIS Style Manual

DIS needs to develop a style manual that provides agents with clear report writing guidelines. This manual should describe the wide range of organizational, document design, and stylistic factors that affect reading speed and comprehension. Also, the manual should illustrate the impact these factors have on reading ease by providing numerous "before" and "after" examples.

This manual would also define the language customs appropriate for DIS reports and serve as a baseline from which all agents, new and experienced, can judge the effectiveness of their report writing skills. Furthermore, team leaders and SACs could use the manual as a training tool. The manual would provide these supervisors with a concrete vocabulary about effective report writing that they could use to provide their agents with concrete feedback about the quality of their reports.

Interviews with Adjudicators

To determine the relative effectiveness of special agents' report writing skills, it was essential to assess how adjudicators read these reports. Twelve adjudicators--six from the Air Force Security Clearance Office (AFSCO) and six from the Department of the Navy Central Adjudication Facility (DONCAF)--were interviewed to determine if they had difficulty processing PSIs. Group interviews (six adjudicators per group) lasting approximately two hours were conducted at the respective facilities.

One group of adjudicators interviewed had many general suggestions on how to make reports easier to read. Although these adjudicators did not have a good critical vocabulary about language and organization to clearly indicate what were the specific problems in the field reports, they did have a good sense of what bothered them about the way the reports were written. These adjudicators strongly believed that changes in report-writing organization and style would make it easier for them to read and assess the reports.

The other group felt that by and large the field agents had adequate report-writing skills. This group had its Chief of Central Adjudication sitting in during the meeting. During the group interview this group seemed reticent to voice concerns. However, when several of these senior adjudicators were questioned alone while they actually adjudicated cases, they pointed out problems with the way field agents wrote and organized reports.

Also, six adjudicators were observed while they adjudicated cases containing derogatory information. The adjudicators were asked questions about

- * the process they used to read the reports (e.g. front to back, back to front, section by section, etc.);
- * the difficulties, if any, they had while reading the reports, and the reasons for these difficulties;
- * their perception of the relative readability of the reports;
- * the decision-making process they used while evaluating the cases.

The results of these interviews and observations follow. The adjudicators were promised anonymity; consequently, neither adjudicator names nor central adjudication sites are ascribed to any of the comments.

Group Interview Results

Almost all of the adjudicators complained of eye fatigue and several of frequent headaches. Four even stated that their eyeglass prescriptions have had to be made progressively stronger over the last several years. These problems were caused by three factors:

1. A typical adjudicator, particularly those assessing cases with derogatory information, spends 5-6 hours each day reading;
2. The print quality, type kind and size, and line spacings in the reports is poor, increasing the difficulty of reading the reports. Also, the paper used throws off a significant amount of glare from the fluorescent lights, further causing reading difficulty;
3. Supporting information they received on microfiche was often extremely difficult to read. Adjudicators would review information on microfiche only if they believed the fiche contained crucial information about security worthiness.

Probably only job redesign could eliminate the large amount of time spent reading. However, problems caused by print quality, type size, line spacing, and "high glare" paper could be solved. Document design researchers have found, for example, that 12-point serif type is easiest to read.

When adjudicators were asked what special agents could do to make the reports easier to read, they came up with a number of ideas.

Report Summaries. Several adjudicators indicated that case summaries, similar to executive summaries or abstracts, would help them gain a quick overview of the case and guide their reading of it. In addition to case summaries, adjudicators stated that a brief synopsis of report sections containing significant amounts of derogatory information (typically subject interview and developed reference interview sections) would help them anticipate information to come and thus be able to assess that information more critically. More than half of the adjudicators complained that trying to follow a narrative without a preview of what was to come made it difficult to remember important information. The result was that they had to take brief notes to put related information together or to reread the narrative several times to get a clear sense of how information was related.

Topic Method of Organization. Adjudicators were asked if they preferred that report sections containing significant amounts of derogatory information be organized by topic rather than by the chronology of the narrative. All adjudicators indicated that the topic organizational method would make it easier to process and understand information.

This organizational method would force field agents to put related information together rather than relaying that information in the order that it was discussed during the interview. As one adjudicator noted, a subject interview report section would be easier to read if all the information about financial difficulties were in one section, information about substance abuse in another section, and so on.

Several adjudicators also noted that narrative information chronologically arranged was difficult to accurately classify and remember because different topics had different time lines. As a result, adjudicators claimed they became tangled in a bewildering number of dates they had difficulty following. If information were organized topically and described in reverse chronological order under that particular topic, adjudicators felt it would much easier to process that information.

Poor Writing, Image, and Credibility. Several adjudicators also pointed out the inconsistent quality of writing they reviewed. One adjudicator was troubled by basic errors in grammar and usage. He viewed these problems as symptoms of sloppy work and poor thinking. More importantly, he said he found himself questioning information the field agent provided because the mechanical errors had undercut the agent's credibility. Other adjudicators agreed that grammatical, spelling, usage, and punctuation errors caused them to question the thoroughness and intelligence of the field agent.

These observations suggest that adjudicators may link report writing effectiveness with investigation quality. Also, there may be a correlation between quality of report writing and adjudicator perception of investigation completeness; poorly written reports may trigger adjudicator requests for more information. Most importantly, the negative perceptions associated with poorly written reports may cause adjudicators during their decision process to unconsciously assess field agents as a mitigating factor.

Document Design. Several adjudicators pointed out that a large number of adjudicators wrote "wall to wall" reports. When asked to clarify what they meant, the adjudicators responded that page after page was filled with information: the agent did not paragraph, provide connections between ideas, but merely dumped information on the page for the adjudicator to sort out. Another adjudicator indicated that there was too much "mind dumping" on paper going on out in the field. The adjudicators felt that shorter paragraphs, lists, and headings would make it easier for them to digest derogatory information.

Individual Interview Results

Six adjudicators were observed and protocolled while they were adjudicating cases. These interview-protocols were conducted to determine how adjudicators actually read the field reports and to gauge their responses to the connotative aspect of language.

Unique Reading Habits. Adjudicators did not read PSIs the way one expects a reader to process a document. Adjudicators did not start with the report's first word and read to the end of the report. Once adjudicators checked to ensure that reports had all the necessary information, they skimmed reports in very idiosyncratic ways. Most adjudicators looked for large blocks of information that were more than mere boilerplate. For example, one adjudicator read the PSI from back to front because, as he pointed out, most of the "good stuff" tends to be in the back of the report. In contrast, another adjudicator read from front to back to get a sense of what was in the report and to determine where she needed to focus her energies.

Moreover, it became clear that these adjudicators treated PSIs as a combination of closely linked smaller reports--subject interview, subject statement, developed references, financial information, and so on--whose relative importance was determined by the amount of derogatory information a section appeared to contain. When adjudicators focused on a section containing derogatory information, then they started to read the report very carefully (word after word), or in the way most people expect a reader to process a document.

Adjudicators' Information Processing Difficulties. When carefully reading report sections with derogatory information, adjudicators again read differently from most readers. From listening to adjudicators' comments as they were read, it became clear that they were attempting immediately to mentally map information, classify it, and integrate it into a decision template so that they could determine if the candidate deserved clearance. In short, they were reading to make a decision, not reading to learn or gather information.

Often, though, these adjudicators had difficulty mapping and classifying information because of the way that sections with derogatory information were organized and written. For example, one experienced adjudicator had to resort to taking fairly careful notes to sort out or classify the credit, alcohol and drug use, and alleged sexual misconduct information presented in the subject interview section of the report. This note-taking occurred because the adjudicator's short-term memory was time after time overwhelmed with large amounts of seemingly unrelated information. The special agent who wrote this report section had not used information design strategies, previewed information, and classified and organized it into manageable, easy-to-process chunks for the adjudicator. The adjudicator's note-taking became a way of organizing and classifying information for himself; in essence, he was forced to reconstruct the report.

Obviously, this reconstruction process was time consuming and an energy drain on the adjudicator. The note-taking and rereading required to relocate necessary information probably quadrupled the time it took the adjudicator to process and analyze information in that section of the report.

This difficulty in mentally mapping and classifying information surfaced time and again while observing adjudicators read report sections containing derogatory information. Sadly, the adjudicators viewed these "non-reader friendly" written communication habits as the norm because they had encountered them so frequently.

Ironically, observing adjudicators assess PSIs revealed several other reasons (in addition to those outlined in the Special Agent Report Writing Characteristics section of this report) why special agents compose difficult-to-read report sections.

1. Agents do not see longer report sections as "mini" reports that need to contain sentence previews of the points they are to cover; headings telegraphing information contained in a particular section; and lists, bullets, and bold print to highlight important information. Agents treat these report sections as information depositories, not as reports unto themselves.
2. Agents are unaware of the unique reading patterns of adjudicators. No previous training has taught them to structure reports, paragraphs, and sentences to meet the needs of readers who need to read in such an atypical manner.

Adjudicators' struggles to mentally map and classify information could also result in their reading or processing the same information content differently. Theoretically, these inconsistent interpretations of information content could cause adjudicators to rule differently on the same case. For example, while observing adjudicators read and protocoling them about their reading processes, the researcher also read through the cases to determine if he would have difficulty processing information. Roughly 30% of the time the researcher discovered that he and the adjudicator read or processed basic information in different ways. These differences were not in matters of interpreting the significance of information, but merely in processing the content of the report.

The way the report was written and organized caused these different "readings" of report content. Often passive verbs, unclear pronouns, and the separation of the subject from the main verb made it difficult to determine who was the agent of particular actions. Also, the extremely long paragraphs, lack of transitional tags, and lack of headings and lists made it extremely difficult to sort and remember information and to keep chronological sequences of events and time periods correct.

During these observations and protocols, it became clear that in a number of circumstances adjudicators were creating meaning in sections of the PSIs because field agents had left meaning ambiguous. And as mentioned earlier, this task of creating

meaning was a difficult, time-consuming process that drained energy from the adjudicators, energy that was needed to effectively rule on the case.

The field agents' job when composing reports is to limit communication uncertainty; in other words, he is responsible for ensuring that adjudicators process information content in only one manner. However, the greater amount of derogatory information a field agent needs to convey, the greater the possibility that the field agent will have significant difficulty accurately conveying that information because of ineffective writing tools.

Varying Responses to Connotative Language. Adjudicators also responded differently to the connotations of the language that special agents used. These responses could have a significant impact on how the case was adjudicated. Terms like "financial irresponsibility," "bankruptcy," "sexual misconduct," "drug abuse," and so on triggered in adjudicators radically different reactions to similar kinds of information. In other words, these terms evoked significantly different language schema--other language associations that make up a reader's understanding of these terms--in adjudicators. For example, the words "bankruptcy," "past-due," "collection agency" triggered in one adjudicator reviewing a PSI containing a history of significant financial problems (bills referred to collection agencies, a bankruptcy, and a current history of late payments) language schema that caused the adjudicator to feel that the subject was irresponsible, dishonest, and would be prone to financial blackmail. He intended to recommend denial of clearance and started drafting a Letter of Intent (LOI). In contrast, another adjudicator in the same adjudication facility was evaluating a PSI with an almost identical financial profile (in fact, the history of financial difficulty was more severe). This agent reacted neutrally to terms like "bankruptcy," "past due," and "collection agency." She believed the subject had merely fallen on bad times and had run into a string of bad luck.

This pattern of adjudicators deploying different language schemata in response to language connotation occurred several times while adjudicators were being observed. In addition to the schemata associated with words suggesting financial irresponsibility, words associated with sexual misconduct and substance abuse triggered very different language schemata in adjudicators. Given the significant differences in perceptual sets of adjudicators, it is not surprising that such differences would occur.

Adjudicators, however, believed that bias reflected in different responses to language would not be a factor in their assessment of subjects. When asked to describe how they guarded against such possibility of bias, all the adjudicators indicated that they used the "whole person" approach when adjudicating cases. However, adjudicators had difficulty describing how they put into operation those "whole person" criteria.

To summarize, the group discussions and individual sessions with adjudicators revealed that the current organization, format, and style of ROIs made these reports difficult to read. Adjudicators often had to untangle twisted chronology, separate unrelated from related information, and sort through information presented in visually

unappealing, difficult-to-read formats. In short, adjudicators had to work hard to mentally map information so they could make a well informed security worthiness decision.

These adjudicators believed that their reading and information analysis tasks would be easier if field agents provided a brief synopsis of ROI sections containing a significant amount of derogatory information, organized information by topic and then by chronology, used shorter paragraphs and sentences as well as headings and subheadings to improve document design. However, empirical research needs to be done to determine if these changes will improve adjudicators' reading speed, comprehension, decision quality, and confidence in their decisions.

Conclusions

The conclusions listed below are divided into three sections: special agent writing habits, written communication training, adjudicators' reading habits.

Special Agent Writing Habits

1. Special agents need a better reader orientation when composing reports. Agents need to be more aware of the unique information processing habits of adjudicators. Also, agents need to be more self-conscious about the effect that language and document organization have on adjudicators' ability to easily process field reports.
2. Agents' written communication habits appear to be inappropriate for the information processing needs of adjudicators. These language habits are vestiges from either previous academic training or past work experience.
3. The organizational, document design, and stylistic strategies special agents use when writing reports need to be significantly refined. The agents' writing habits strain reading ease and appear to affect comprehension. This conclusion, though, needs empirical support.

Written Communication Training

1. New agents need more training in how to write readable PSIs. Most PSI course materials about writing focus on report content.
2. DIS training facilities need to be made aware of the impact that prior language habits have on the way that agents write PSIs. Changing the language habits of field agents to meet the language processing needs of adjudicators represents a major intervention in the way agents think about effective language use.
3. DIS instructors, team leaders, and SACs need training to improve special agents' written communication skills. Special agent superiors usually are not skilled in giving concrete feedback about subordinates' written communications.

Adjudicators Information Processing Needs

1. Adjudicators require documents enabling them to quickly skim information and to mentally map it. Better organized and more clearly written documents will decrease the visual strain that current documents cause adjudicators as well as decrease the amount of intellectual energy needed to process the documents.
2. Adjudicators need to develop a better self-consciousness about their own language biases and the extent to which their adjudication decisions may be affected by those biases.

Recommendations

The conclusions listed above are based on observing the information processing habits of a small number (6) of adjudicators. No empirical testing was done to determine if significant changes in document design, organization, and writing style will make the derogatory sections of PSIs quicker to read and easier to understand. Consequently, there is a need to

Conduct empirical research to determine the specific effects that different document design, organizational, and stylistic strategies will have on adjudicator information comprehension, reading time, and perception of reading ease.

If testing shows that the document design, organizational, and stylistic strategies advocated by researchers do improve reading speed, comprehension, and perception of comprehension, then the following steps should be taken:

1. Create a DIS special agent PSI Style Manual that clearly states how PSI reports should be designed, organized and written. This style manual should not only include document design, organizational, and clear writing principles specifically geared to the needs of adjudicators but also numerous "before" and "after" examples to drive home the point of these principles.
2. Expand and better integrate the section on clear writing in the present PSI Training Program so that special agent trainers can begin breaking down the current language customs of new trainees. At least 6-8 hours should be devoted to clear writing.
3. Design a 3-day Effective Written Communication Training Program for special agent trainers. This program could inform trainers of the writing strategies that affect reading speed and comprehension. Also, the program could teach trainers how to teach effective written communications skills and to give concrete feedback about writing.
4. Design for team leaders and SACs a "How to Manage Agents' Writing" management development program. This program could provide DIS managers with information about effective writing and with strategies for giving effective feedback about writing.

Final Observations

This research project assumes adjudicators will be reading hard copy field reports. In all likelihood that will change in the next 5-10 years. Advances in computer hardware, software, and networks will undoubtedly result in special agents writing field reports on lap-top PC's and adjudicators reading them at work stations. To make these on-screen reports readable, field agents will need specialized writing skills.

PERSEREC believes that field agents will need to use virtually all of the new document design, organizational, and stylistic strategies outlined in this report when adjudicators begin reading reports on screen. These strategies should significantly reduce the amount of disorienting scrolling adjudicators would have to do to read field reports because it would enable them to easily mentally map information, thereby reducing the demands on adjudicators' short-term memory. As a result, adjudicators should experience significantly less fatigue, require less time to process the case, and have a higher degree of confidence in their adjudication decision. However, the effect of reading documents on screen written in different organizational patterns and styles is an area that needs further exploration. This work is a logical follow-up to the work we now propose.

In short, we strongly believe that special agents' current written communication habits will be extremely dysfunctional when adjudicators begin reading field reports on screen. We believe DIS needs to take the lead in supporting research that determines empirically which methods of communicating written information make it easier for adjudicators to read and understand field reports on paper. The results from this research could not only help make field agents more effective report writers now but also give agents the basic written communication tools they will need to have in the computer-mediated communication environment of the 21st century.

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